

Rewetting Our Waterways: Floodplain Restoration In An Occupied Landscape

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UPPER GRANDE RONDE RIVER BASIN

Evolution of Fish Habitat & Floodplain Restoration

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Oregon's "Model Watershed"



Grande Ronde
&
Imnaha Basins

- 1991 Northwest Power & Conservation Council (Formed by the Power Act) recommended a **locally led** effort to habitat restoration
 - Model Watersheds in OR, ID, WA
- 1992 designated 'Model Watershed' by Governor Barbara Roberts
- 1992 Union and Wallowa County governments appointed GRMW Board of Directors and hired an executive director.



Confederate Tribes of the Umatilla Indian Reservation (CTUIR)

Department of Natural Resource Mission

To protect and enhance the First Foods - water, salmon, deer, cous, and huckleberry - for the perpetual cultural, economic and sovereign benefit of the CTUIR.



Northwest Power Council F&W Program

- Adaptive management, focus on resiliency
- Process-Based Floodplain & Habitat Restoration

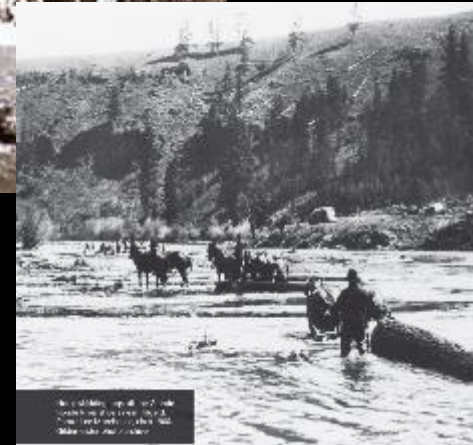
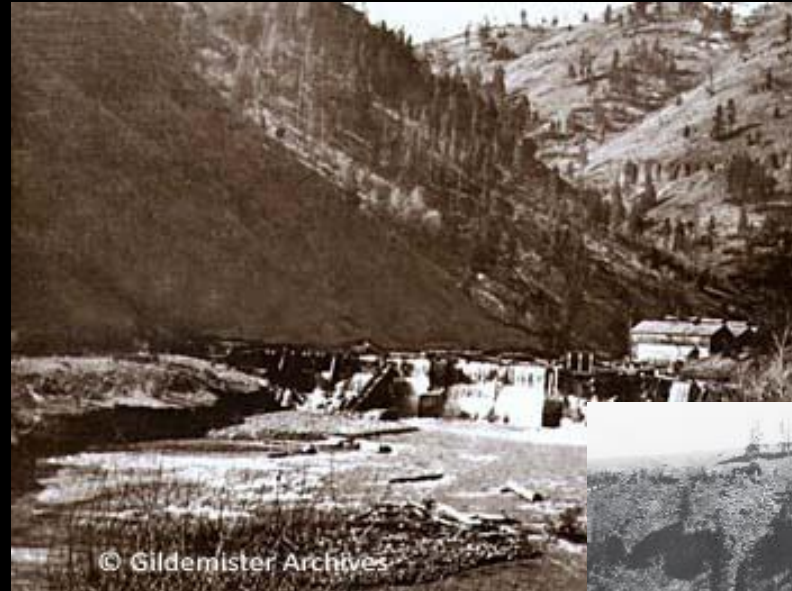
NOAA Science Center:

- Removing fish passage barriers
- Floodplains connectivity
- Improve streamflow

GRANDE RONDE BASIN HISTORY

Abbreviated history relevant to land use in the upper Grande Ronde River (after Gildemeister 1998)

1812	Fur trader Robert Stuart observes beaver and otters common
1812 cont'd	War of 1812: American & England struggling to control Pacific Northwest – intensifies beaver trapping
1850	Donation Land Claim Law enacted, encouraging settlement by emigrants with regards to Indian inhabitants
1855	Treaty between U.S. and several upper Columbia River Indian Tribes exchanging ceded lands for reservations and rights to traditional hunting, fishing, and gathering
1861-1862	First land claim in Grande Ronde valley, beginning of town of La Grande
1862	First sawmill and salmon-blocking dam built on Grande Ronde River at Oro Dell (other sawmills followed)
1865	Water-powered flourmill established on Catherine Creek
1869	Railroad route laid out across Grande Ronde valley
1870	Construction begins on State Ditch and Catherine Creek ditch draining Tule Lake
1890	Grande Ronde Lumber Company acquires timberland and begins constructing splash dams on Grande Ronde River and tributaries (Minam River also splash dammed, Catherine Creek is not)
1890s	Development of railroad network in Grande Ronde tributaries
1900	Estimated 50 sawmills in watershed, annual timber export estimated at 32.5 million bd.ft.
1928	First log trucking in Catherine Creek (Hall Ranch)
1934	Taylor Grazing Act leads to decline of livestock grazing on public lands
1939	Ora Plata Mining begins dredging down Grande Ronde River
1946	Establishment of Union Co. SWCD leads to substantial land leveling, ditching, and stream channeling projects
1955	Construction of Hwy 244 switch from railroad logging b
1984-1985	Log jams blasted on Catherine Creek below Ladd Ck to flooding; Corps of engineers clears willow and cottonw
1989	Recognition that peak flows shifting as much as 30 day based on 1904-1989 record

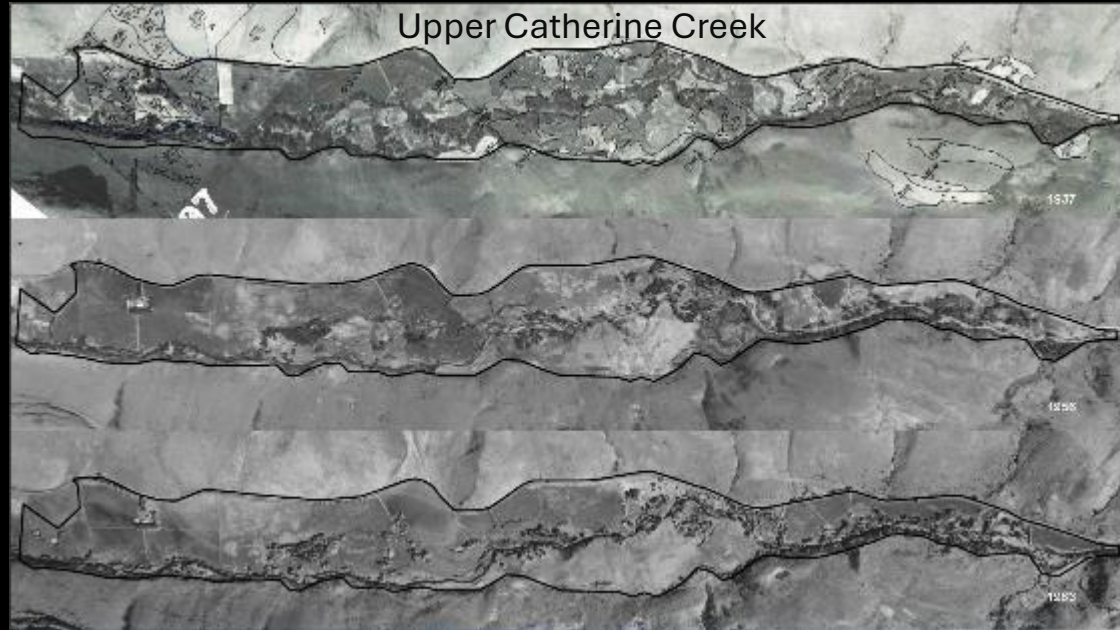


HISTORIC FLOODPLAIN & FISH HABITAT CHANGES

Grande Ronde Valley



Upper Catherine Creek



Bear Creek



Willow Creek Watershed



McCoy Meadows



Lower Rock Creek



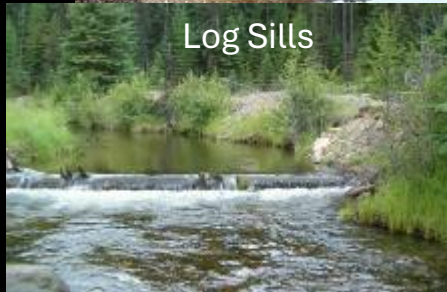
1980's-1990's Habitat Enhancement



Log Sills



Livestock Exclusion



Habitat Wood



Rock Structures & Pool Habitat

Early 2000's Channel & Floodplain Restoration

Rosgen Channel Design



Plug & Pond



Historic Channel Reactivation

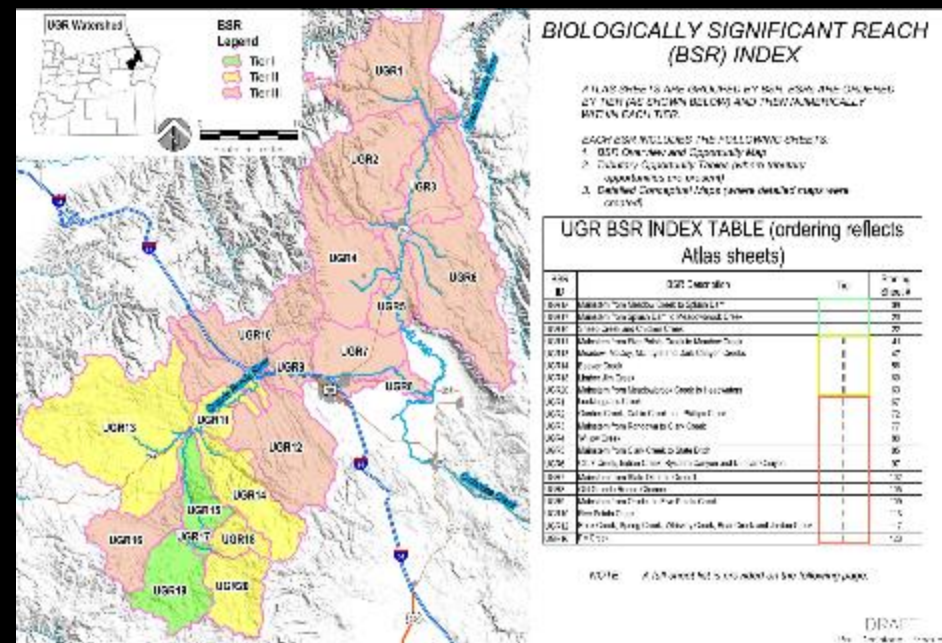
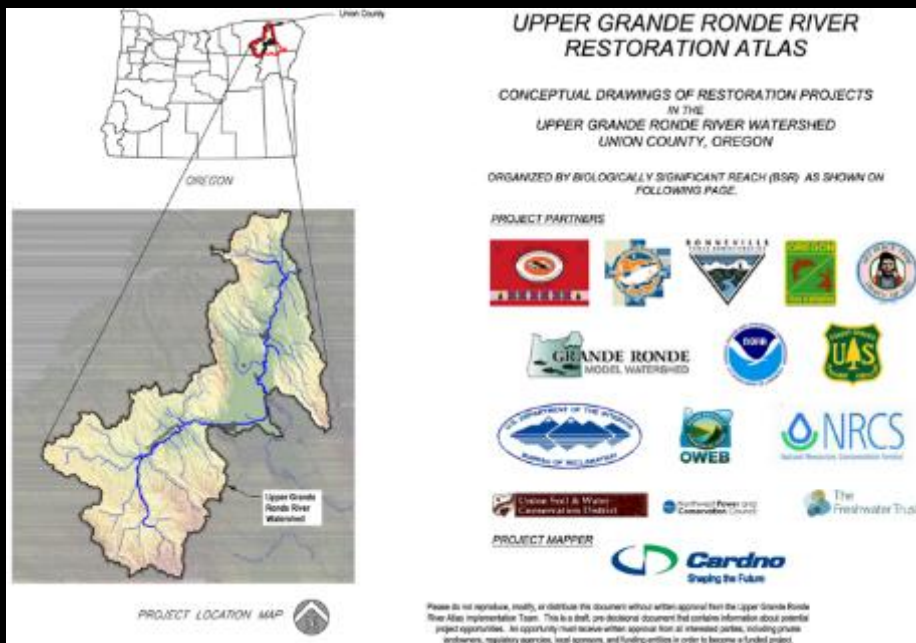


Channel Design for 2 Year Flow

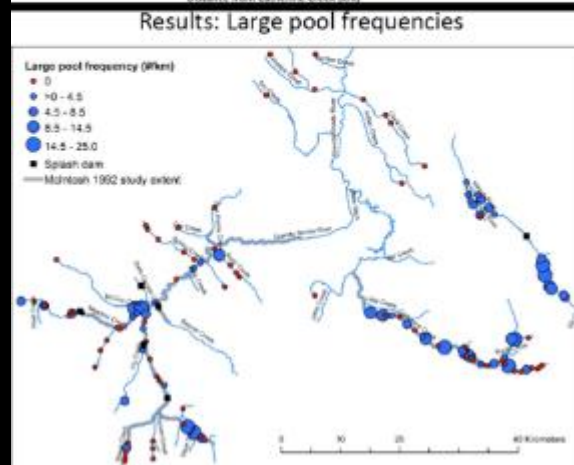
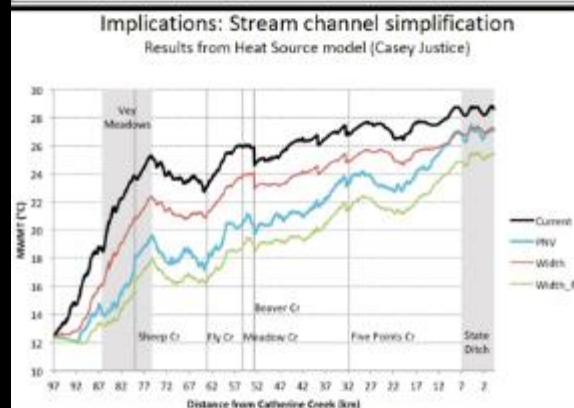
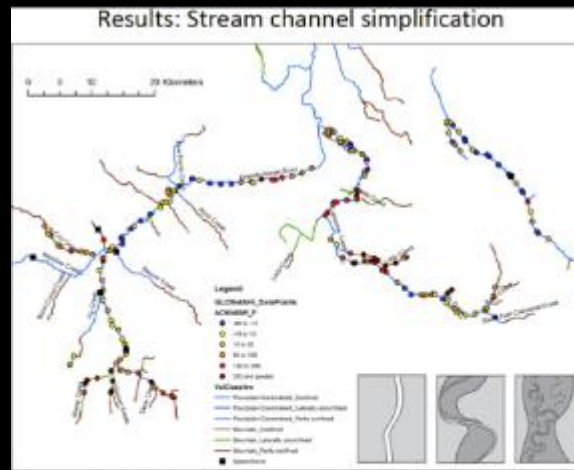
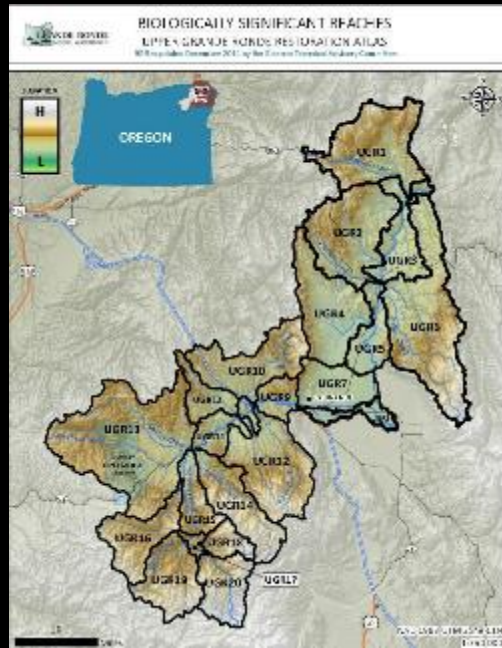


Grande Ronde & Catherine Creek ATLAS (2013-2016)

Opportunistic  Strategic Restoration

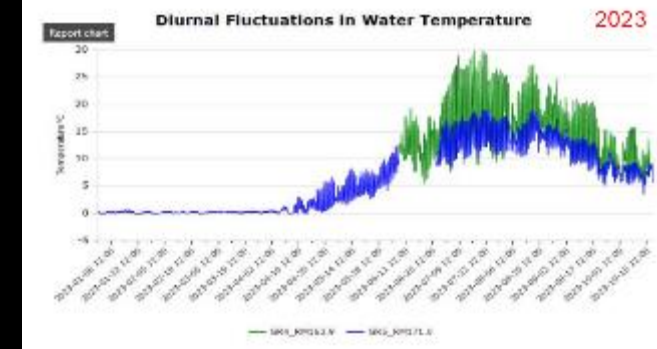


Habitat Limiting Factors & Assessments



Thermal Diversity

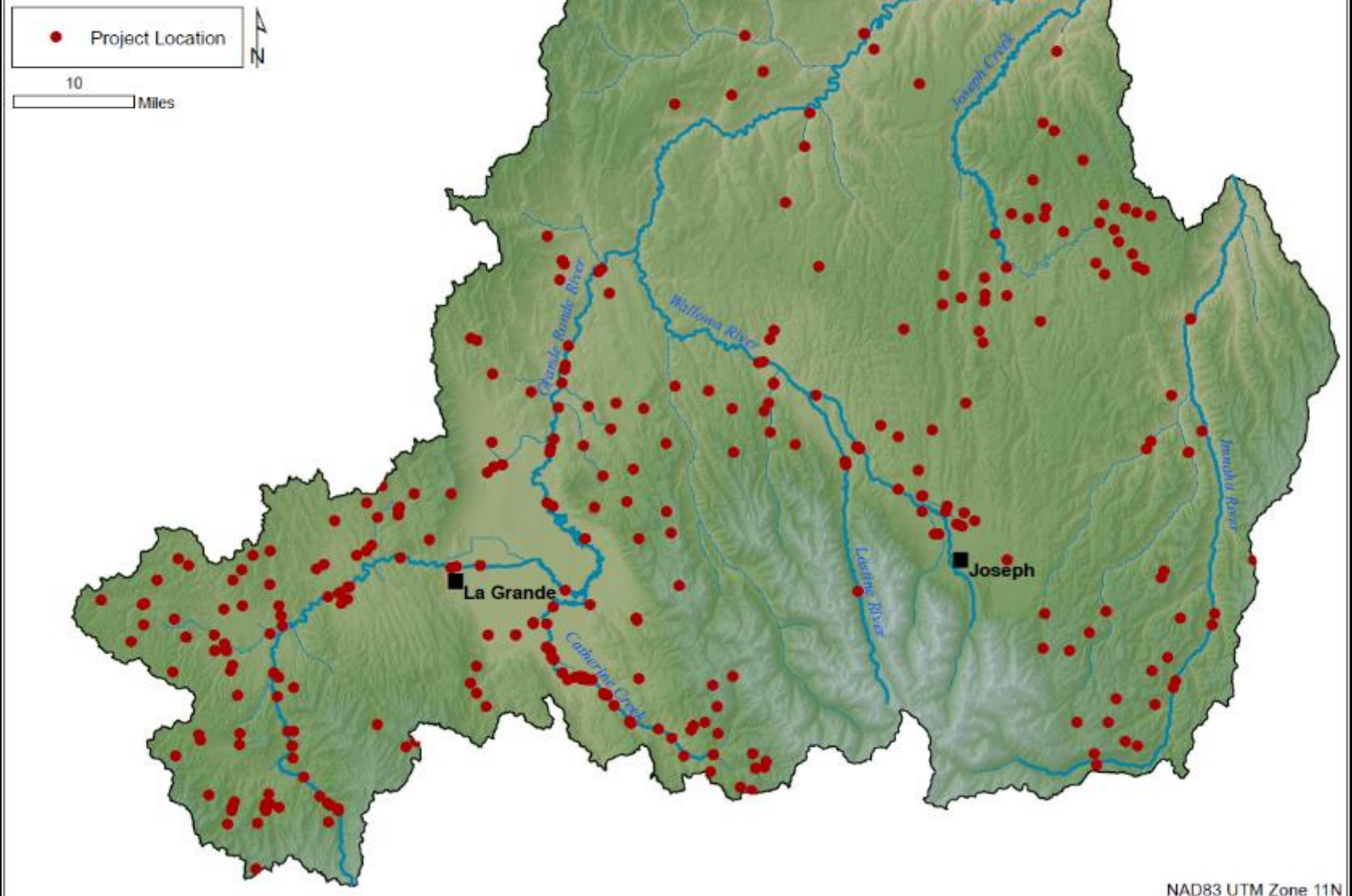
CTUIR Temp Log Above (BLUE) and Below (GREEN) Vey Meadow 2021-2023



Habitat Suitability Modeling

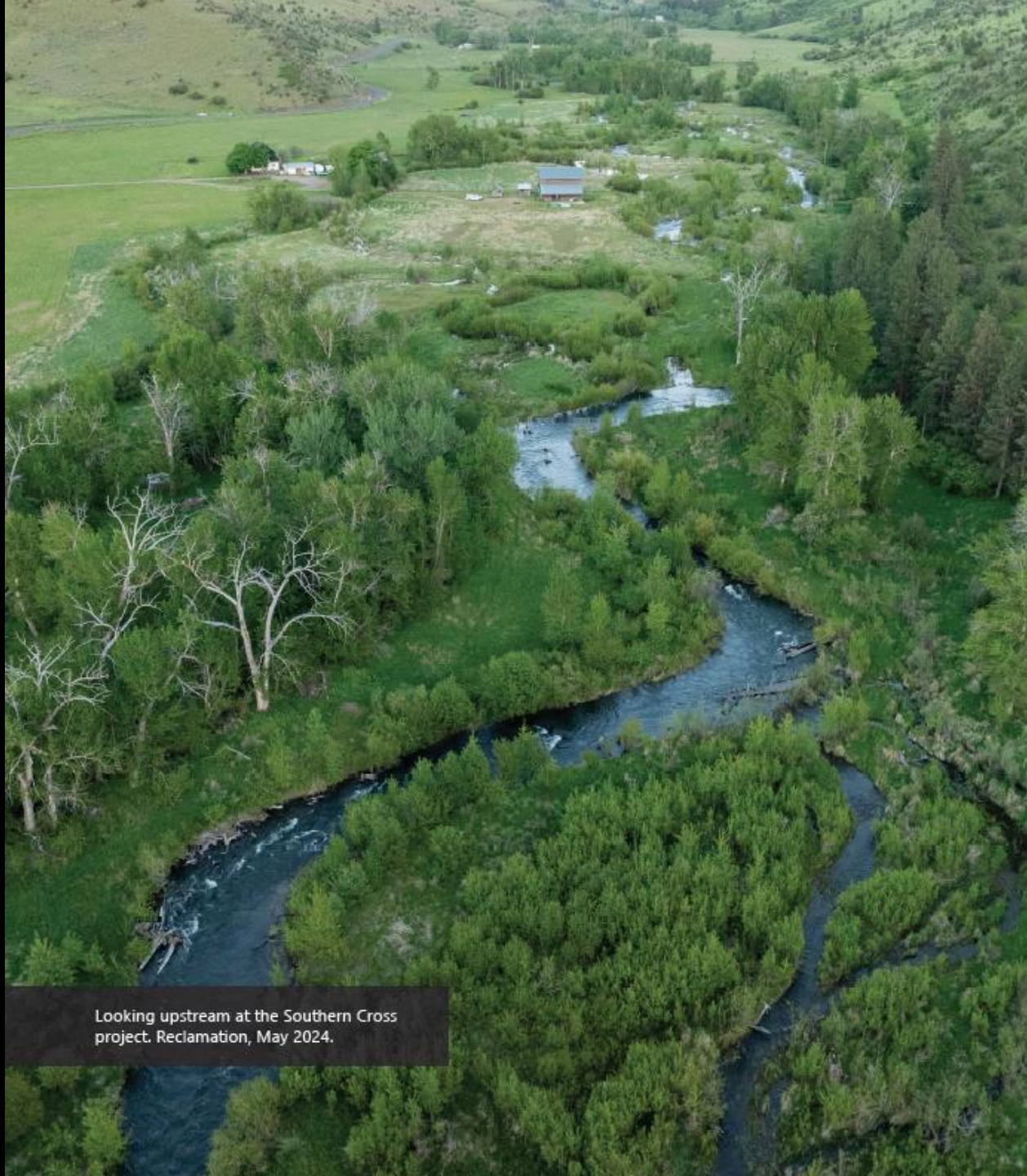


Grande Ronde Model Watershed: Projects 1994-2015

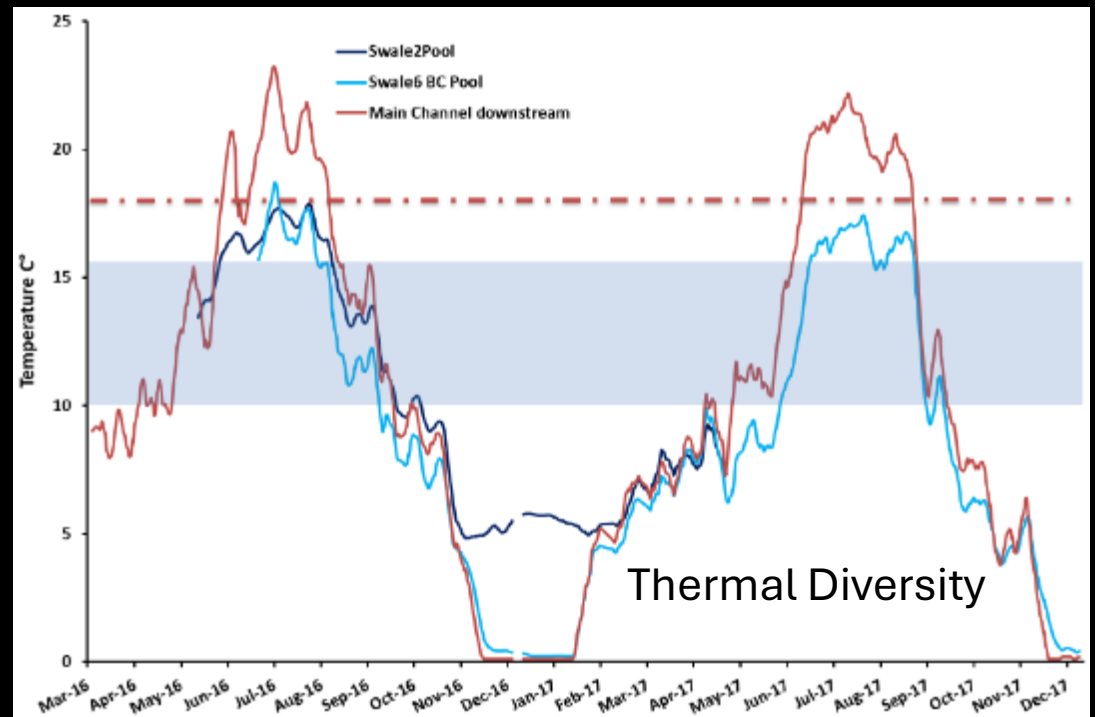


Catherine Creek Floodplain Restoration 2015-16





Looking upstream at the Southern Cross project. Reclamation, May 2024.



Bird Track Springs 2018-19

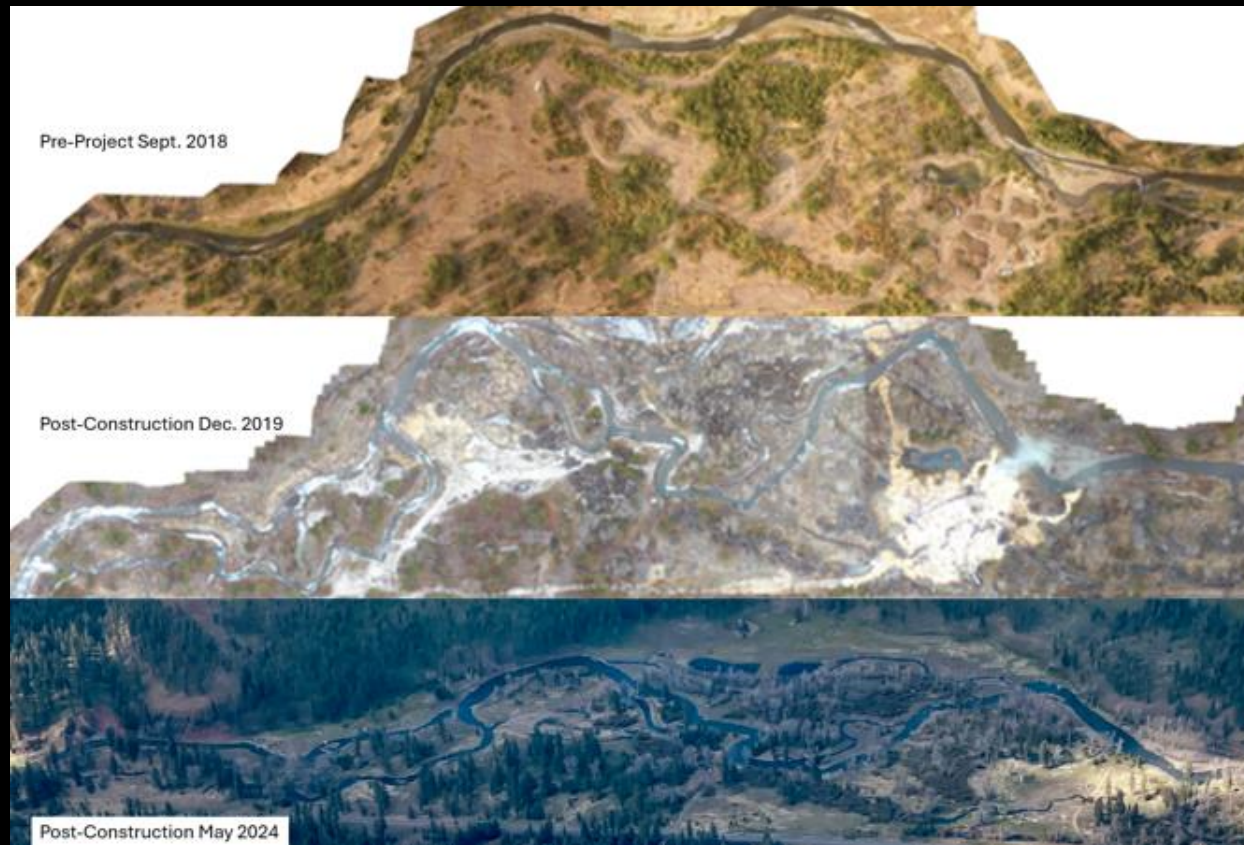
-Island Braided Channel
Morphology

-135 acres floodplain
reconnected

>2.5 miles of restored open
channel habitat

-17 Large main channel pools
(10 pools/mile)

-47 Side channel pools
(26 pools/mile)





Pre-project May 2018



Post-project June 2022



Middle Grande Ronde River Helicopter Wood Augmentation & Future Gravel Augmentation



Pre-project June 2017



Post-project July 2019



Post-project June 2020

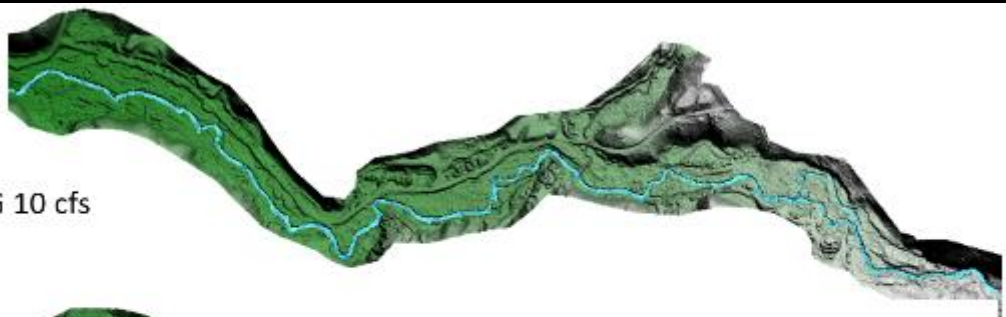
Upper Grande Ronde Mine Tailings Reach

Dredge Mining Aftermath UGR Project Area Circa 1939

Photo Courtesy: USU Archives

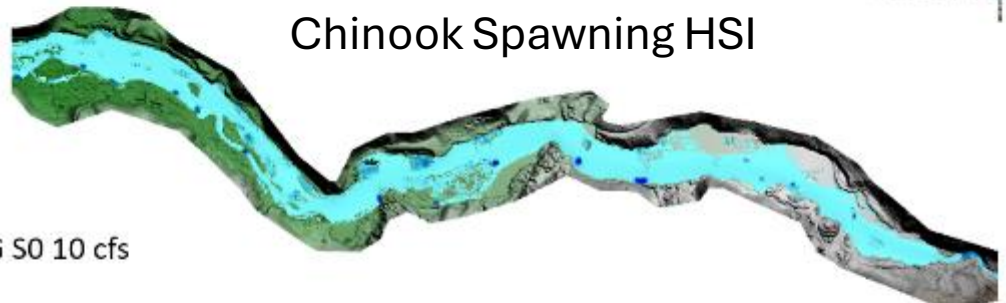


EG 10 cfs

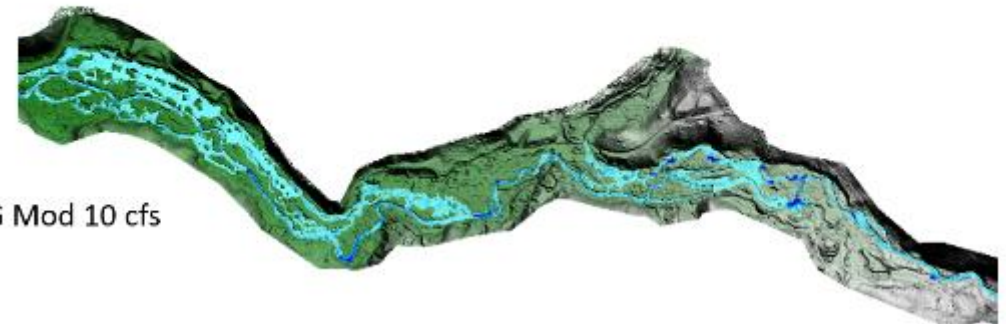


Chinook Spawning HSI

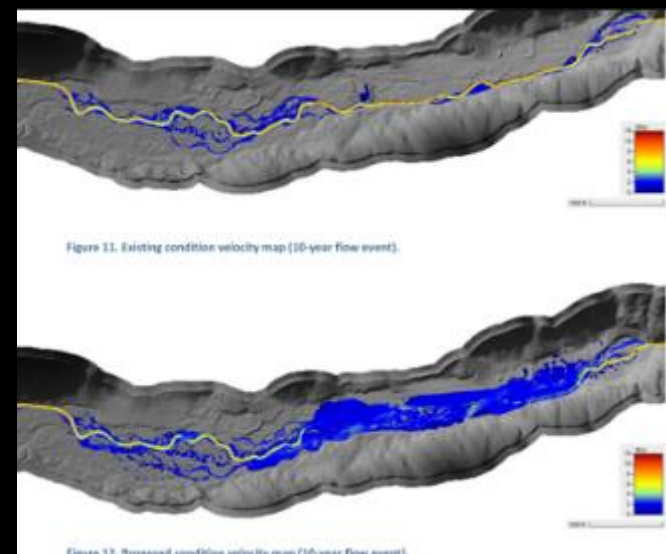
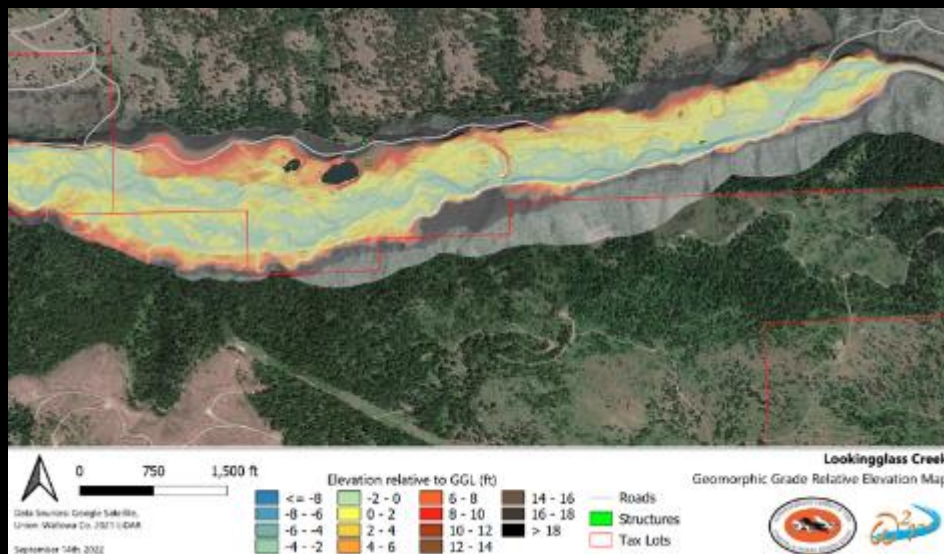
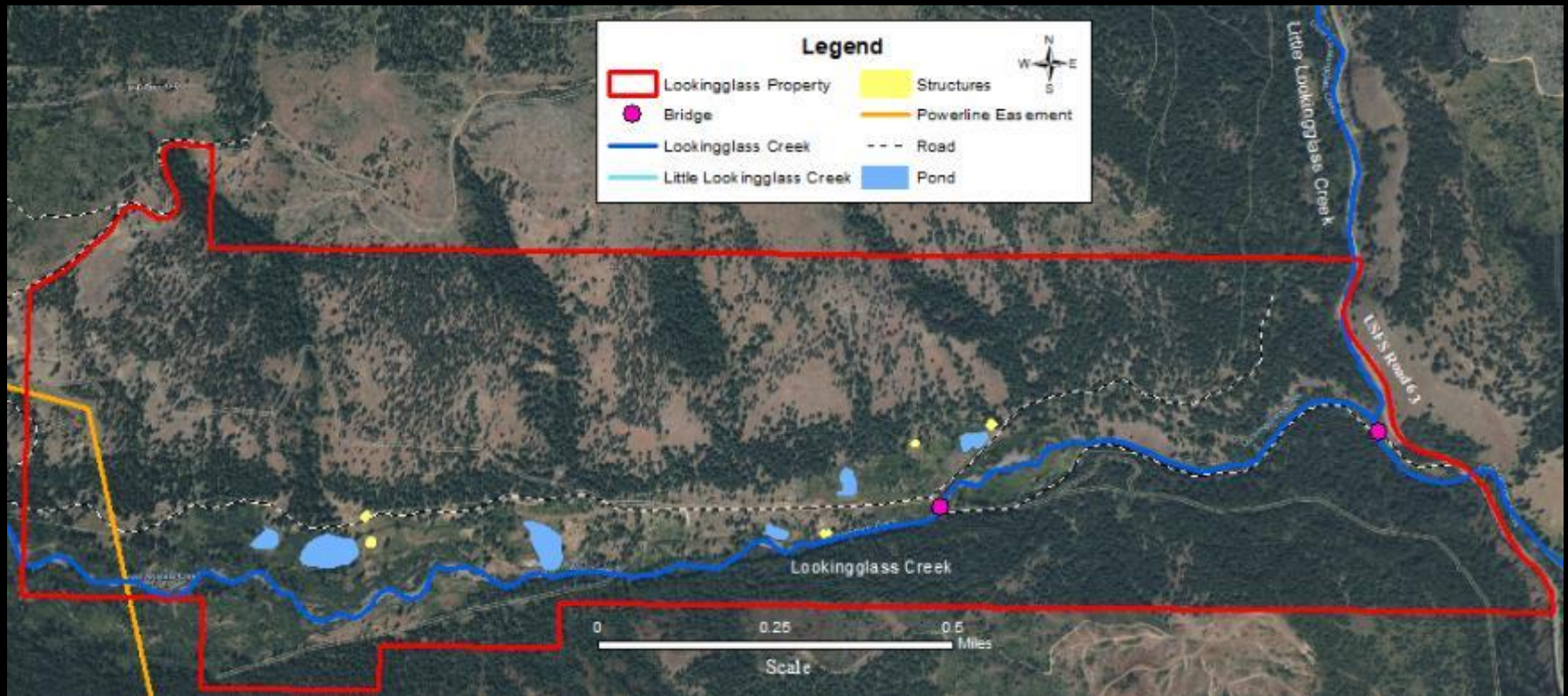
FG S0 10 cfs



FG Mod 10 cfs

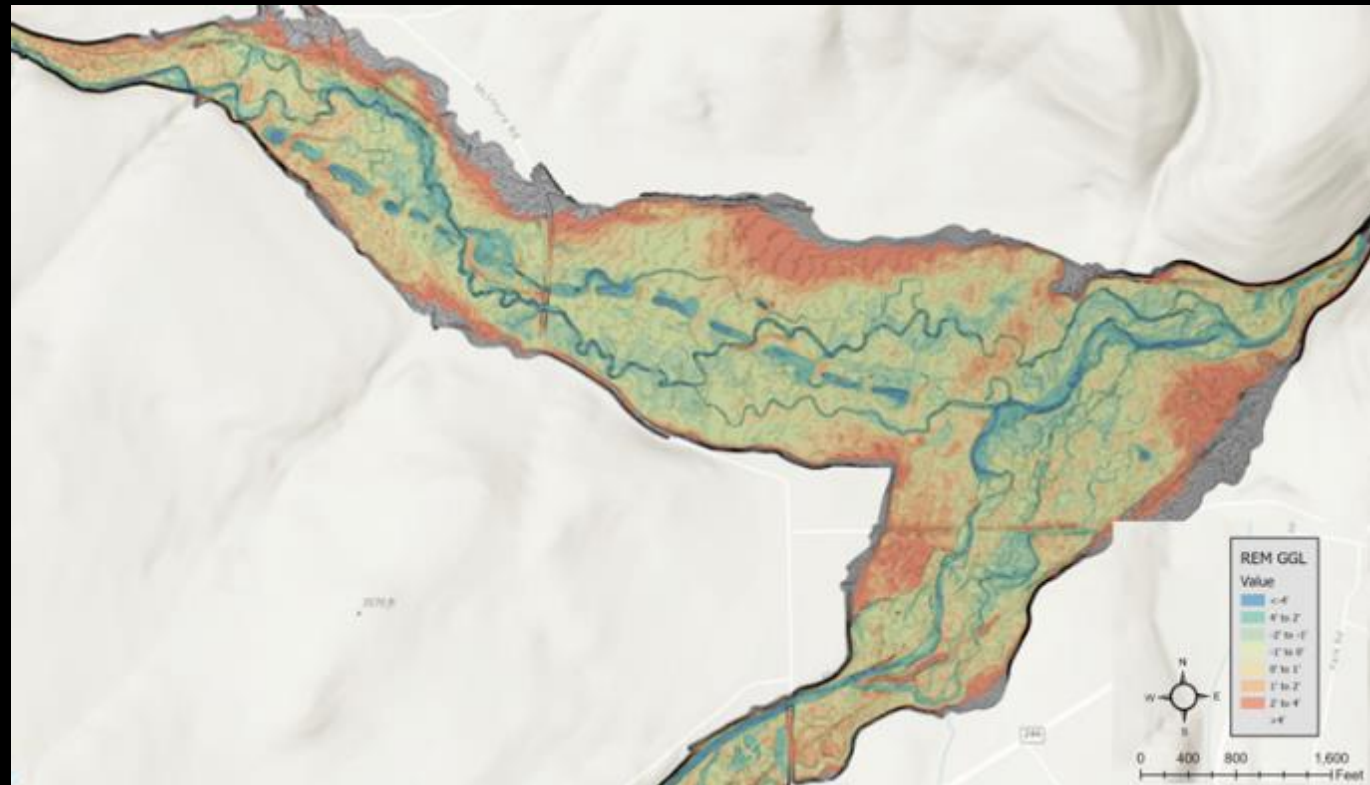


Lookingglass Conservation Property





McCoy Meadows Conservation Property



Valley Reset/Stage Zero



Wrap Up

- Importance and value working from a prioritization framework
- Project design flows, premise of design to bankfull discharge
- Habitat complexity and diversity matter (fishery life stages & needs)
- Water Temperature (summer and winter)/habitat limiting factors
- Be patient, let the project develop. Monitor